

CLAIMS

What is claimed is:

1. A line card for a telecommunication system, comprising:
 - a multiple mode circuit that supports a plurality of telecommunications services including
 - 5 xDSL telecommunication service, ISDN telecommunication service, and POTS service.
2. The line card of claim 1, wherein the multiple mode circuit comprises:
 - a first interface that supports xDSL service.
3. The line card of claim 2, wherein the first interface supports at least one of asymmetric
 - 10 digital subscriber line service, asymmetric digital subscriber line lite service, and very high bit rate digital subscriber line service.
4. The line card of claim 2, wherein the multiple mode circuit supports the xDSL service
 - substantially concomitant with at least one of the POTS service and the ISDN service.
5. The line card of claim 2, wherein the multiple mode circuit comprises:
 - a second interface that supports at least one of the ISDN telecommunication service and
 - 15 the POTS service.
6. The line card of claim 5, wherein the second interface supports at least one of 2B1Q ISDN
 - service and 4B3T ISDN service.
7. The line card of claim 5, wherein the second interface supports POTS with PPM service.
8. The line card of claim 7, wherein the second interface supports at least one of 12 kHz PPM
 - 20 service and 16 kHz PPM service.
9. The line card of claim 1, wherein the plurality of telecommunications services includes P-Phone service.

10. The line card of claim 1, wherein the plurality of telecommunication services includes
DAML service.
11. The line card of claim 1, wherein the multiple mode circuit comprises:
an automatic mode circuit that configures the multiple mode circuit.
- 5 12. The line card of claim 11, wherein the automatic mode circuit configures the multiple mode
circuit to operate a combination of the plurality of telecommunication services.
13. The line card of claim 12, wherein the automatic mode circuit comprises:
a controller that receives instructions with regard to the plurality of telecommunication
services and controls the multiple mode circuit in accordance with the instructions.
- 10 14. The line card of claim 13, wherein the controller receives the instructions from an external
device, wherein the external device comprises one of a broad band element management
system, a PSTN switch, and a PSTN maintenance center.
- 15 15. The line card of claim 14, wherein the controller is capable of changing the configuration
during a communication session.
- 16 16. The line card of claim 15, wherein the controller changes the configuration during a
communication session based on information received via a handshake signal.
17. A line card for a telecommunication system, comprising:
a multiple mode circuit that supports a plurality of telecommunication services including
xDSL telecommunication service, POTS service, and POTS with PPM service.
- 20 18. The line card of claim 17, wherein the PPM service is any one of 12 kHz PPM service and
16 kHz PPM service.
19. The line card of claim 17, wherein the multiple mode circuit further comprises:
a first interface that supports xDSL service.

20. The line card of claim 19, wherein the multiple mode circuit supports the xDSL service substantially concomitant with one of the POTS service and the POTS with PPM service.
21. The line card of claim 19, wherein the first interface supports any one of asymmetric digital subscriber line service, asymmetric digital subscriber line lite service, and very high bit rate digital subscriber line service.
22. The line card of claim 19, wherein the multiple mode circuit comprises:
 - a second interface that supports the POTS service and the POTS with PPM service.
23. The line card of claim 17, wherein the multiple mode circuit supports ISDN service.
24. The line card of claim 23, wherein multiple mode circuit supports any one of 2B1Q ISDN service and 4B3T ISDN service.
25. The line card of claim 23, wherein the multiple mode circuit supports the ISDN service substantially concomitant with the xDSL digital subscriber line services.
26. The line card of claim 17, wherein the multiple mode circuit supports P phone service.
27. The line card of claim 17, wherein the multiple mode circuit comprises:
 - an automatic mode circuit that configures the multiple mode circuit.
28. The line card of claim 27, wherein the automatic mode circuit configures the multiple mode circuit to operate a combination of the plurality of telecommunication services.
29. The line card of claim 28, wherein the automatic mode circuit comprises:
 - a controller that receives instructions with regard to the plurality of telecommunication services and controls the multiple mode circuit in accordance with the instructions.
30. The line card of claim 29, wherein the controller receives the instructions from an external device.

31. The line card of claim 30, wherein the controller is capable of changing the configuration during a communication session.
32. The line card of claim 31, wherein the controller changes the configuration during a communication session based on information received via a handshake signal.
- 5 33. A line card for a telecommunication system, comprising:
a multiple mode circuit that supports xDSL telecommunication service, ISDN telecommunication service, POTS telecommunication service, and POTS with PPM telecommunication service.
34. The line card of claim 33, wherein the multiple mode circuit is capable of concomitant operation of the xDSL telecommunication service and the POTS telecommunication service.
35. The line card of claim 33, wherein the multiple mode circuit further supports underlying P phone service.
36. The line card of claim 33, wherein the multiple mode circuit further supports DAML service.
- 13 37. The line card of claim 33, wherein the multiple mode circuit is capable of concomitant operation of the xDSL telecommunication service and the POTS with PPM telecommunication service.
38. The line card of claim 33, wherein the POTS with PPM telecommunication service comprises any one of POTS with 12 kHz PPM service and 16 kHz PPM service.
- 20 39. The line card of claim 33, wherein the multiple mode circuit is capable of concomitant operation of the xDSL telecommunication service and the ISDN telecommunication service.
40. The line card of claim 33, wherein the ISDN telecommunication service comprises one of 2B1Q ISDN service and 4B3T ISDN service.

41. The line card of claim 33, wherein the xDSL telecommunication services comprise one of asymmetric digital subscriber line service, asymmetric digital subscriber line lite service, and very high bit rate digital subscriber line service.

42. A method for supporting multiple telecommunication services in a line card comprising the
5 steps of:

selecting either a first operational mode or a second operational mode for the line card, wherein the first operational mode provides substantial concomitant operation of xDSL telecommunication service and POTS service, and the second operational mode provides substantial concomitant operation of xDSL telecommunication service and POTS with PPM
10 service;

if the first operational mode is selected, separating xDSL telecommunication signals and POTS signals, and processing the xDSL telecommunication signals and the POTS signals;

if the second operational mode is selected, separating xDSL telecommunication signals and POTS with PPM signals and processing the xDSL telecommunication signals and the POTS
15 with PPM signals.

43. The method of claim 42, wherein the step of selecting comprises the step of:

receiving instructions from an external device regarding which operational mode to select.

44. The method of claim 43, wherein the step of receiving instructions comprises the step of:

20 receiving the instructions in a handshake signal.

45. The method of claim 42, wherein the step of selecting comprises:

monitoring operation of the line card; and

selecting an operational mode based on operation of the line card.

46. The method of claim 42, wherein the xDSL telecommunication service comprises any one of asymmetric digital subscriber line service, asymmetric digital subscriber line lite service, and very high bit rate digital subscriber line service.

47. The method of claim 42, wherein the POTS with PPM telecommunication service
5 comprises any one of POTS with 12 kHz PPM service and POTS with 16 kHz PPM service.

48. A method for supporting multiple telecommunication services in a line card comprising the steps of:

selecting either a first operational mode or a second operational mode, wherein the first operational mode provides support for substantial concomitant operation of xDSL telecommunication service and POTS service, and the second operational mode provides support for substantial concomitant operation of xDSL telecommunication service and ISDN telecommunication service;

if the first operational mode is selected, separating xDSL telecommunication signals and POTS signals and processing the xDSL telecommunication signals and the POTS signals; and

15 if the second operational mode is selected, separating xDSL telecommunication signals and ISDN signals and processing the xDSL telecommunication signals and the ISDN signals.

49. The method of claim 48, wherein the step of selecting comprises the step of:

receiving instructions from an external device regarding an operational mode to select.

50. The method of claim 49, wherein the step of receiving instructions comprises the step of:

20 receiving the instructions in a handshake signal.

51. The method of claim 48, wherein the step of selecting comprises:

monitoring operation of the line card; and

selecting an operational mode based on operation of the line card.

52. The method of claim 48, wherein the xDSL telecommunication service comprises any one of asymmetric digital subscriber line service, asymmetric digital subscriber line lite service, and very high bit rate digital subscriber line service.

53. The method of claim 48, wherein the ISDN telecommunication services comprises any one of 2B1Q and 4B3T ISDN telecommunication services.

54. A line card, comprising:

a first interface that supports a plurality of xDSL telecommunication services;

a second interface that supports a plurality of underlying services (USVs); and

a controller that configures the first interface for one of the plurality of xDSL

telecommunication services and configures the second interface for one of the plurality of USVs.

55. The line card of claim 54, wherein the first interface supports asymmetric digital subscriber line service, asymmetric digital subscriber line lite service, and very high bit rate digital subscriber line service.

56. The line card of claim 54, wherein the second interface supports ISDN telecommunication service, POTS service, Periodic Pulse Metering (PPM) service, P-Phone service, and Digital Added Mainline (DAML) service.

57. The line card of claim 56, wherein the second interface supports one of 4B3T ISDN service and 2B1Q ISDN service.

58. The line card of claim 56, wherein the second interface supports one of 12 kHz PPM service and 16 kHz PPM service.